REMARKS

By the present amendment, independent claims 37 and 38 have been amended to correct an apparent typographical error. Claims 1-38 are pending. Entry of the above amendments is in order and such is respectfully requested.

In the Action, an apparent typographical error in connection with the term "alloy" as contained in both claims 37 and 38 was noted. As mentioned above, these claims have been corrected herein.

Claims 1-38 were rejected under 35 USC § 103(a) as being unpatentable over the patent to Kawagoe et al in view of the patent to Terada et al in view of the newly cited patent to Nakagawa et al. As before, it basically was asserted in making this rejection that the cited Kawagoe et al patent teaches flame-sprayed copper based compositions with ranges for disclosed components overlapping those as claimed. Further, it was alleged that each patent teaches to selectively melt or unmelt alloying elements. However, it was

acknowledged that the Kawagoe et al patent does not teach feeding the copper and the aluminum separately, but it was alleged that the Terada et al patent as well as the newly cited patent to Nakagawa et al supply this deficiency since they each teach use of mixtures of particles for flame spraying to produce alloys. Reconsideration of this rejection in view of the above claim amendments and the following comments is respectfully requested.

It is submitted that the cited patents to Kawagoe et al, Terada et al, and Nakagawa et al whether taken singly or in combination, do not teach or suggest the presently claimed invention. The Kawagoe et al patent teaches a swash plate having a flame sprayed layer of copper-based alloy which contains 0.5 to 50% of one or more of not more than 40% of lead, not more than 30% of tin, not more than 0.5 of phosphorous, not more than 15% aluminum, not more than 10% of silver, not more than 5% of silicon, nor more than 5% of manganese, not more than 5% of chromium, not more than 20% of nickel, and not more than 30% of zinc. Among other things, the Kawagoe et al patent does not teach or suggest the simultaneous spraying of Cu alloy powder and Al alloy powder, because the coarse Cu

alloy powder and the fine Cu alloy powder are thermally sprayed to form the melted and unmelted structures.

The Terada et al patent discloses a brazable aluminum material composed of a core of aluminum and a brazing agent layer consisting of a brazing agent thermally sprayed onto a surface of the core. The brazing agent sprayed onto the core is an Al-Si alloy and/or a mixture of Al powder and Si powder and a number of unmelted particles of brazing agent are present in the brazing agent layer. Therefore, four phases, i.e., a melted Al phase, an unmelted Al phase, a melted Si phase, and unmelted Si phase, may be present in the brazable aluminum material according to the Terada et al patent. Among other things, the Terada et al patent does not teach or suggest the simultaneous spraying of Cu alloy powder and Al alloy powder, because only the Al powder is thermally sprayed to form the melted and unmelted structure.

The newly cited Nakagawa et al patent discloses a thermal spray coating material

which comprises 98-70 volume % of Cu-based bronze and 2-30 volume % of Al or Al alloy. The thermally sprayed Al (alloy) powder and the Cu-based bronze powder are melted and blown onto the base material as is set forth on page 3, lines 57-60, a large proportion of the unmelted powder not being preferable as disclosed on column 5, lines 57-58. Therefore, the Nakagawa et al patent discloses microstructure of a (a) melted Cu phase and melted Al phase; (b) melted Cu phase plus a small proportion of unmelted Cu phase as well as melted Al phase plus a small amount of unmelted Al phase. The microstructure (a) mentioned is not included in the presently claimed invention and the microstructure (b) corresponds to the structure F mentioned on page 11 of the present specification.

In any regard, the simultaneous thermal spraying of Cu bronze and Al (alloy) powder has the purpose of, according to column 4, lines 6-10 of the Nakagawa et al patent, restraining the oxidation of Pb in the Cu bronze powder. In the Kawagoe et al patent, the oxidation of Pb is neither taught or suggested. In fact, the Kawagoe et al patent teaches that no oxidation of Pb occurs as is set forth in column 2, lines 40-44, column 5, lines 1-30

and column 5, lines 56-64. Thus, a person of ordinary skill in the art would not employ the simultaneous thermal spraying of the Nakagawa et al patent so as to produce the Cu-Pb-Al-Si alloy disclosed in columns 2 and 3 of the Kawagoe et al patent, because there is no necessity to prevent the oxidation of Pb according to the Kawagoe et al patent.

As is set forth in column 8, lines 13-14 of the Kawagoe et al patent, Al is as a solid solution type element. The solid solution state of Al in a Cu alloy is more easily attained by using the Cu-Al powder than using the Cu powder and Al powder as disclosed in the Nakagawa et al patent. Therefore, a person of ordinary skill in the art would employ the latter powder for producing a Cu-Al solid solution.

Furthermore, the Al-solid solution with Cu solute is disclosed in column 5, line 7 of the Nakagawa et al patent, but a Cu-solid solution with Al solute is not disclosed in the patent, c.f. column 4, lines 30-31 and column 5, line 17. As is described above, a Cu solid solution with Al solute is disclosed in the Kawagoe et al patent. Since the solid-solution

types are contrary to one another in the Kawagoe et al and Nakagawa et al patents, a person of ordinary skill in the art would not conceive of replacing the solid solution of the Kawagoe et al patent with that of the Nakagawa patent and, although the simultaneous thermal spraying of the Cu powder and Al (alloy) powder is disclosed in the Nakagawa et al patent, there is no suggestion to combine their respective teachings. Thus, in view of the above, it is submitted that the combination of the three cited patents would not be evident to one of ordinary skill in the art and such would not achieve the presently claimed invention.

For the reasons stated above, withdrawal of the rejection under 35 U.S.C. § 103(a) and allowance of claims 1 through 38 as amended over the cited patents are respectfully requested.

In view of the foregoing, it is submitted that the subject application is now in condition for allowance and early notice to that effect is earnestly solicited.

In the event this paper is not timely filed, the undersigned hereby petitions for an appropriate extension of time. The fee for this extension may be charged to Deposit Account No. 01-2340, along with any other additional fees which may be required with respect to this paper.

Respectfully submitted,

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